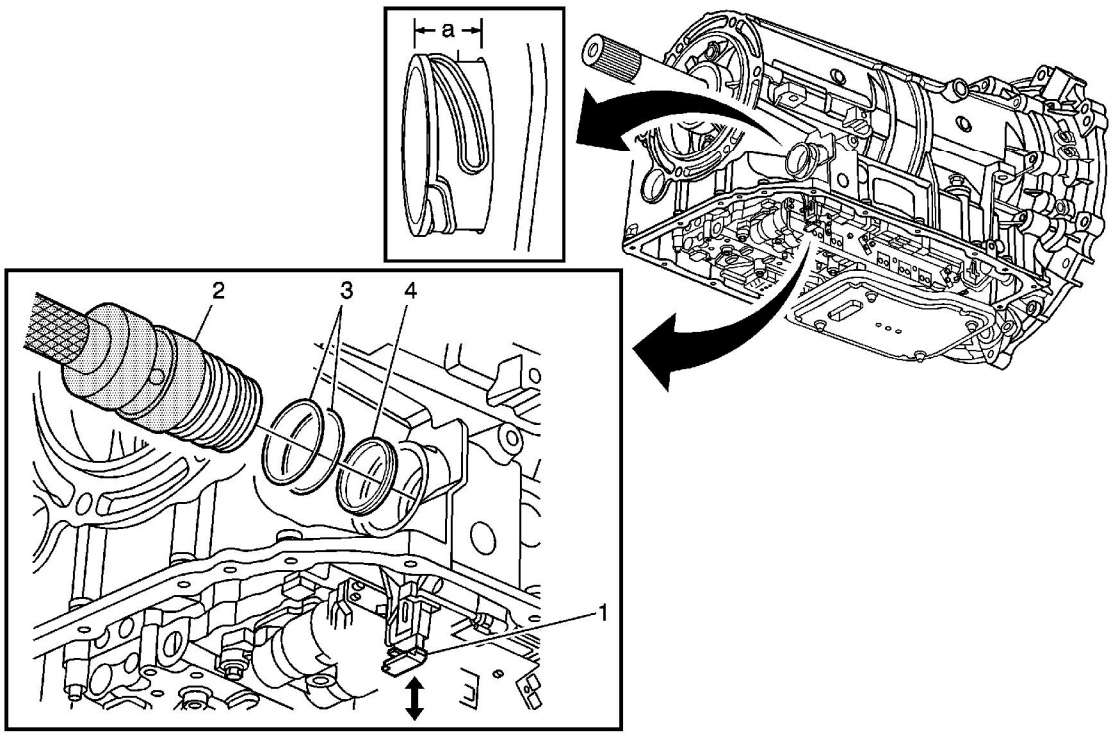
Automatic Transmission Electrical Connector Passage Sleeve Replacement



Callout	Component Name
Notice: Orientate the alignment tab inside the passage sleeve with the slot in the electrical connector of the control solenoid valve assembly. Push the sleeve straight into the case bore and connector. Do NOT rotate the sleeve at any time. Ensure the sleeve is fully seated into the case. When the sleeve is properly installed, the distance from the case surface to the end of the sleeve should be 14-16 mm. Even though the correct electrical connections may still be maintained, failure to ensure proper installation of the sleeve may result in a fluid leak around the sleeve lip seal and into the sleeve cavity. **Preliminary Procedures** 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the transmission oil pan. Refer to Automatic Transmission Fluid, Fluid Pan and/or Filter Replacement . 3. Disconnect the vehicle wire harness electrical connector from the transmission electrical connector passage sleeve.	
1	Electrical Connector Slide Lock **Tip** Pull down on the slide lock to remove the sleeve. Push up on the slide lock after

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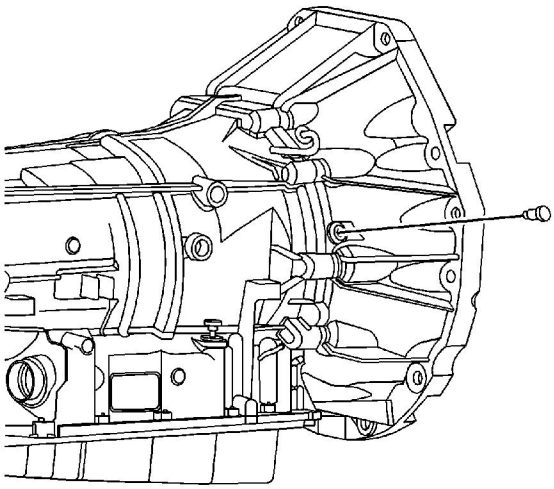
	sleeve installation.
2	Electrical Connector Passage Sleeve **Tip** • Use the DT 47715 Electrical Connector Passage Sleeve Remover/Installer and J 42183 Driver Handle to remove and install the electrical connector passage sleeve. • The distance (a) from the case surface to the end of the sleeve should be 14-16 mm. **Special Tools** • DT 47715 Electrical Connector Passage Sleeve Remover/Installer • J 42183 Driver Handle
3	O-Ring Seal (Qty: 2) **Tip** Use a NEW O-ring seal.
4	Lip Seal **Tip** Use a NEW lip seal.

Automatic Transmission Fluid Pressure Test Hole Plug Replacement

Removal Procedure

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



2. Clean the surrounding area of the oil pressure test plug.
3. Remove the oil pressure test plug.

Installation Procedure

Caution: Refer to Fastener Caution in the Preface section.

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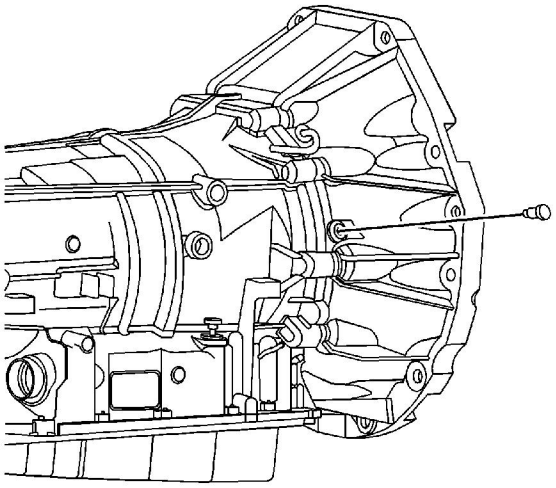
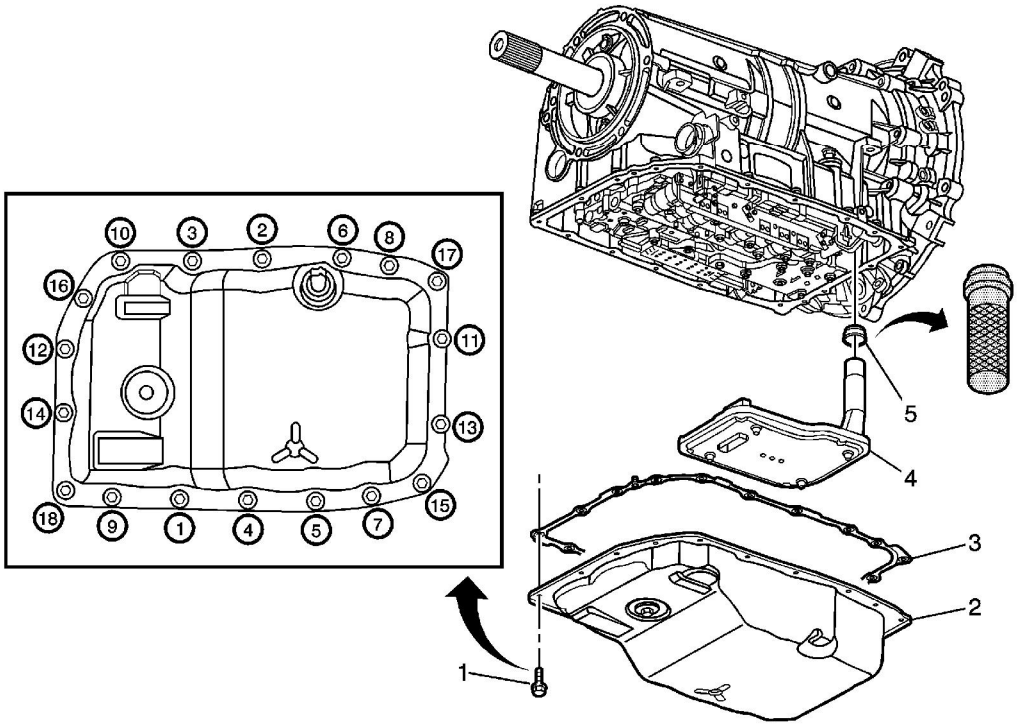


1. Install the oil pressure test plug and tighten to **11 N·m (97 lb in)**.
2. Check the transmission fluid level (fill if necessary). Refer to Transmission Fluid Check.
3. Lower the vehicle.

Automatic Transmission Fluid, Fluid Pan and/or Filter Replacement



Callout	Component Name
Caution: Use Dexron VI transmission fluid only. Failure to use the proper fluid may result in transmission internal damage. **Preliminary Procedures** 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Place a suitable drain pan under the transmission.	
1	Transmission Fluid Pan Bolt (Qty: 18) **Caution:** Refer to Fastener Caution in the Preface section. **Tip** Tighten the bolts in the sequence shown and tighten to **9 N·m (80 lb in)**.
2	Transmission Fluid Pan Assembly **Tip** • Check the condition of the draining fluid. Refer to Transmission Fluid Check.

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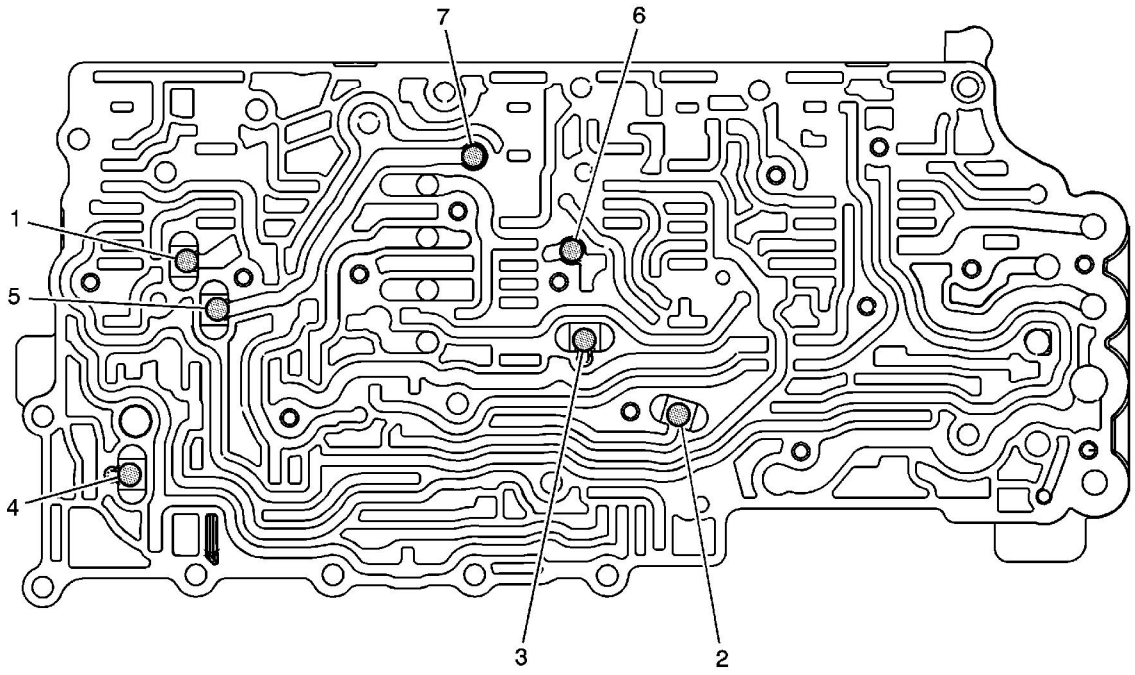
	• Fill the transmission with the proper fluid. Refer to Transmission General Specifications and Transmission Fluid Fill Procedure. • Fill the transmission with the proper amount of transmission fluid. Refer to Fluid Capacity Specifications and Transmission Fluid Check.
3	Transmission Fluid Pan Gasket **Tip** The fluid pan gasket is reusable. Inspect the gasket to determine if it may be reused.
4	Fluid Filter Assembly **Tip** • Pull the fluid filter assembly straight out. Do not bend or twist the filter neck. • Use a new fluid filter assembly.
5	Fluid Filter Seal Assembly **Caution:** Do not damage the case sealing surface when removing the filter seal assembly. **Tip** • Use a screwdriver or snap ring pliers to remove the filter seal. • Use the DT 47848 and the J 42183 to install the filter seal. • Use a new fluid filter seal assembly. • Lubricate the filter seal with transmission fluid before installing the filter. **Special Tools** • DT 47848 Seal Installer • J 42183 Driver Handle

Ball Check Valve Locations



I.D.	Input Oil	Input Oil	Output Oil
1	Drive 1-6	DRV B	CB26/C1234 FD
2	Sol 1	Reverse (Park)	CSV2 Enable
3	Sol 2	C456	CSV3 Enable
4	PS4	C456	CSV2 Latch
5	Drive 1-6	C35R Rev FD	C35R Supply
6	CB26/C1234 FD	--	C1234 FD
7	C35R Supply	--	C35R FD

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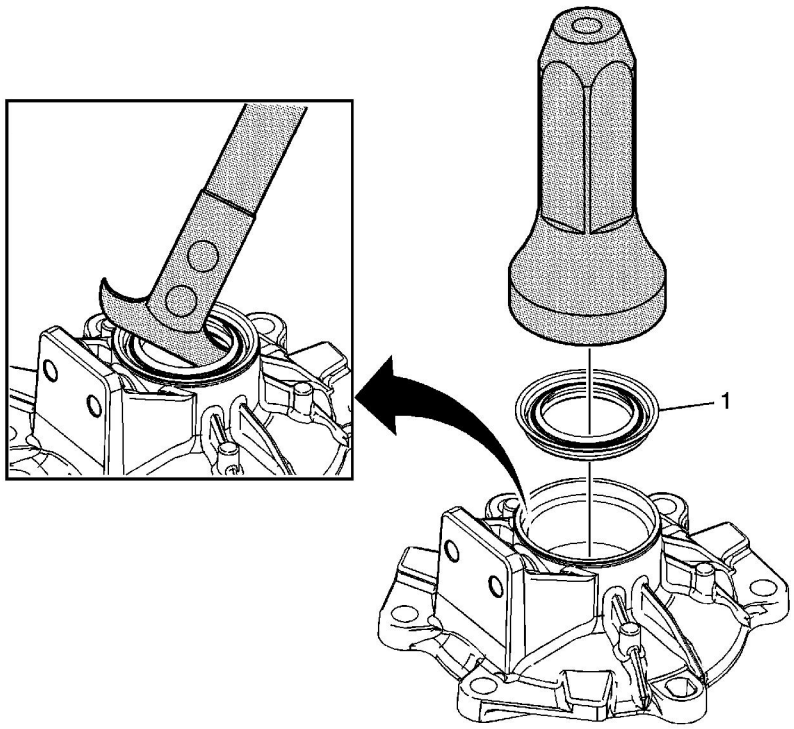
Case Extension and Seal Replacement



Callout	Component Name
1	Output Shaft Seal Assembly **Special Tools** • J 37212 Front Output Shaft Seal Installer • J 45000 Seal Remover

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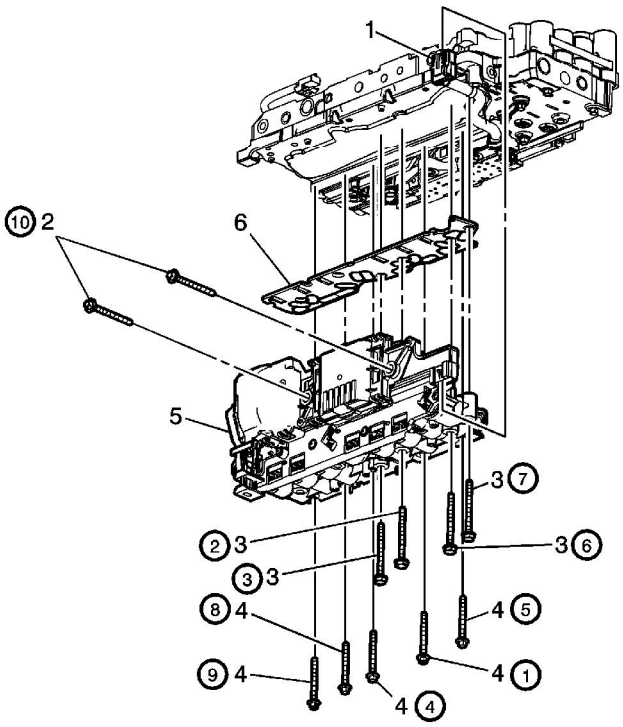
Control Solenoid Valve and Transmission Control Module Assembly Replacement



Callout	Component Name
Preliminary Procedures 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Remove the transmission fluid pan and filter. Refer to Automatic Transmission Fluid, Fluid Pan and/or Filter Replacement.	
1	Manual Shift Shaft Position Switch Assembly Electrical Connector **Tip** Release the connector lock before disconnecting. Engage the connector lock after connecting.
2	Control Module Assembly Heat Sink Bolt (Qty: 2) **Caution:** Refer to Fastener Caution in the Preface section. **Tip** Tighten in specified sequence. **Tighten**

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	8 N·m (71 lb in)
3	Control Solenoid Valve Assembly Bolt (Qty: 4) **Tip** Tighten in specified sequence. **Tighten** 8 N·m (71 lb in)
4	Control Solenoid Valve Assembly Bolt (Qty: 5) **Tip** Tighten in specified sequence. **Tighten** 8 N·m (71 lb in)
5	Control Solenoid Valve and Module Assembly Refer to Control Module References. **Procedure** • Inspect the 4 filter plate retaining tabs. A broken tab may not adequately secure the filter plate to the control solenoid valve assembly. • Align the control solenoid valve assembly with the lower valve body locator pin when assembling.
6	Filter Plate **Tip** Discard filter plate and replace with new.

Following the replacement of the TCM, a harsh upshift may occur between 4th and 5th gear.

If this occurs the following procedure should be followed.

- Make sure both the Scan Tool and TCM calibrations are the latest versions available for reprogramming.
- Check and clear all DTCs that may have set as a result of the programming process.
- Drive maneuvers should be performed at transmission oil temperatures of at least 40°C (104°F).
- Transmission oil levels should be set correctly prior to the starting drive cycles.
- Initial upshifts may have an erratic feel for the first several cycles. They should improve significantly with repeated maneuvers.
- At the start of the drive cycles, no ECM or TCM DTCs should be set. The MIL should not be illuminated.

A drive cycle requires five light throttle accelerations to 40 km/h (25 mph) and five light throttle accelerations to 64 km/h (40 mph).

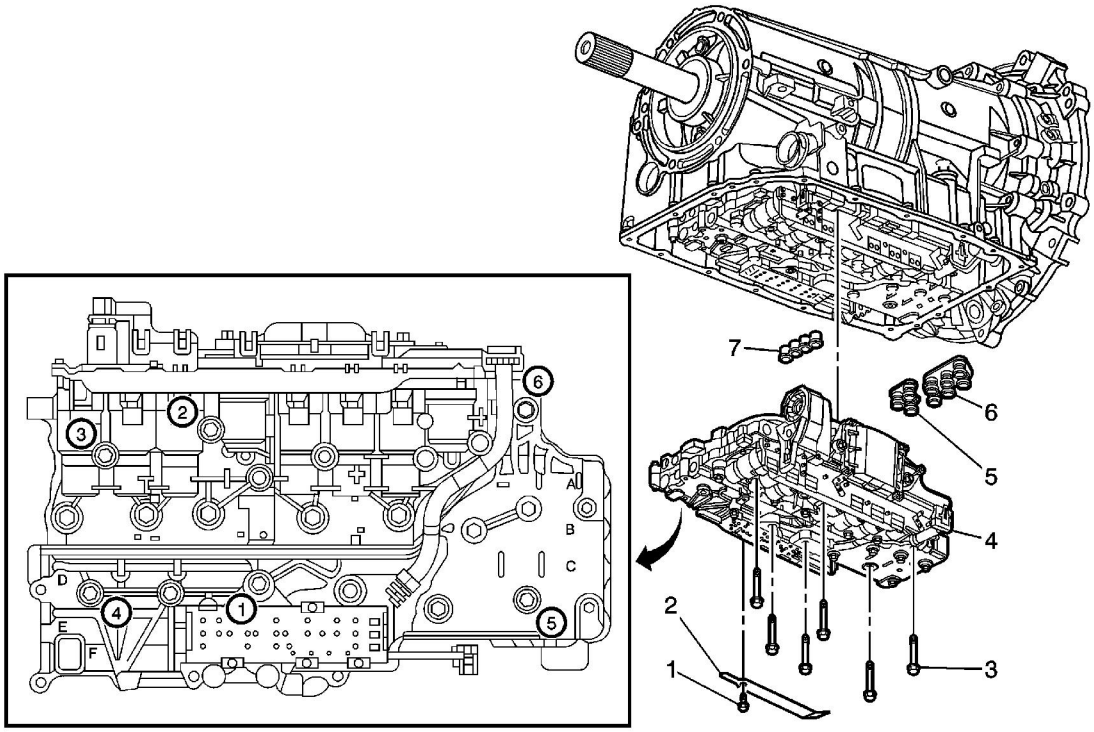
1. From a complete stop, lightly accelerate at a relatively constant throttle pedal position up to 40 km/h (25 mph) or 64 km/h (40 mph).
2. Brake the vehicle to a complete stop.
3. Repeat five times to 40 km/h (25 mph) and five times to 64 km/h (40 mph). Maneuvers can be performed in any combination.

If the garage shifts (Park to Reverse, Park to Drive, Reverse to Drive, Drive to Reverse) feel like they are delayed, garage shifts adapts can also be performed. All garage shifts should be performed with the vehicle stopped, foot on the brake and engine at idle.

1. Shift the transmission from Reverse to Drive leaving the shift lever in Drive for three seconds. After three seconds, shift back to Reverse, leaving the shift lever in Reverse for three seconds. Perform the procedure 10 times (R-D-R-D-R-D...). The transitions need to be directly to Drive and Reverse, without stopping in Neutral.
2. Shift the transmission from Neutral to Drive leaving the shift lever in Drive for three seconds. After three seconds, shift back to Neutral, leaving the shift lever in Neutral for three seconds. Perform the procedure 10 times (N-D-N-D-N-D...).
3. Shift the transmission from Neutral to Reverse leaving the shift lever in Reverse for three seconds. After three seconds, shift back to Neutral, leaving the shift lever in Neutral for three seconds. Perform the procedure 10 times (R-N-R-N-R-N..).

At the end of these maneuvers, the vehicle may still experience some minor driveability issues, but should learn improved shifting performance over the next several key cycles and driving time. Coach the customer about the transmission's ability to self-correct shifting issues or concerns. The transmission adapts are always functional and operate at transmission oil temperatures above 40° C (104°F).

Control Valve Lower Body and Upper Body Replacement



Callout	Component Name
Preliminary Procedures 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Remove the transmission fluid pan and filter. Refer to Automatic Transmission Fluid, Fluid Pan and/or Filter Replacement. 3. Remove the transmission electrical connector. Refer to Automatic Transmission Electrical Connector Passage Sleeve Replacement.	
1	Manual Shaft Detent Bolt **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 12 N·m (106 lb in)
2	Manual Shaft Detent Assembly
	Control Valve Assembly Bolt (Qty: 6) **Tip** Do not remove all the bolts in the control valve body assembly. Remove only the bolts indicated.

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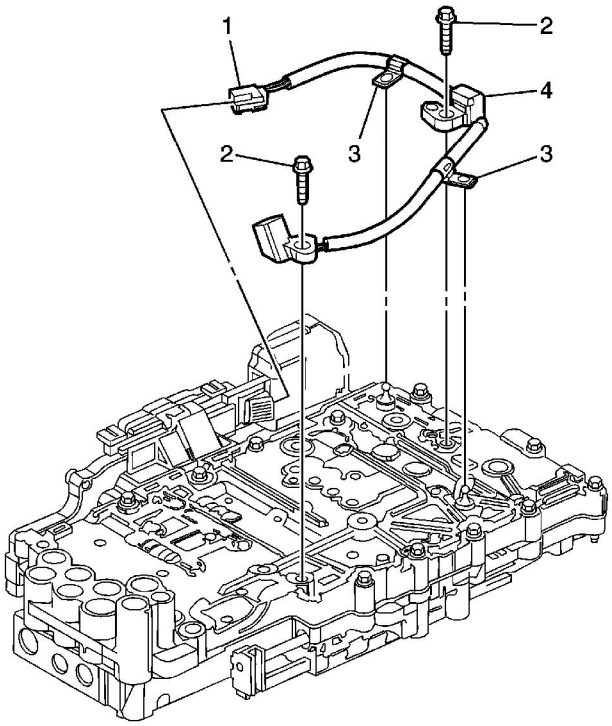
3	Tighten in specified sequence. **Tighten** 8 N·m (71 lb in)
4	Control Valve Assembly
5	Fluid Pump Seal Discard seal and replace with new.
6	Fluid Pump Seal Discard seal and replace with new.
7	Centre Support Fluid Passage Seal Discard seal and replace with new.

Input and Output Speed Sensor Replacement



Callout	Component Name
Preliminary Procedures 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Remove the transmission fluid pan and filter. Refer to Automatic Transmission Fluid, Fluid Pan and/or Filter Replacement. 3. Remove the upper and lower valve body assembly. Refer to Control Valve Lower Body and Upper Body Replacement.	
1	Speed Sensor Electrical Connector
2	Input and Output Speed Sensor Assembly Bolts (Qty: 2) **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 12 N·m (106 lb in)
3	Input and Output Speed Sensor Assembly Clips (Qty: 2) **Tip** Inspect the wiring harness clips for damage replace if necessary.
4	Input and Output Speed Sensor Assembly

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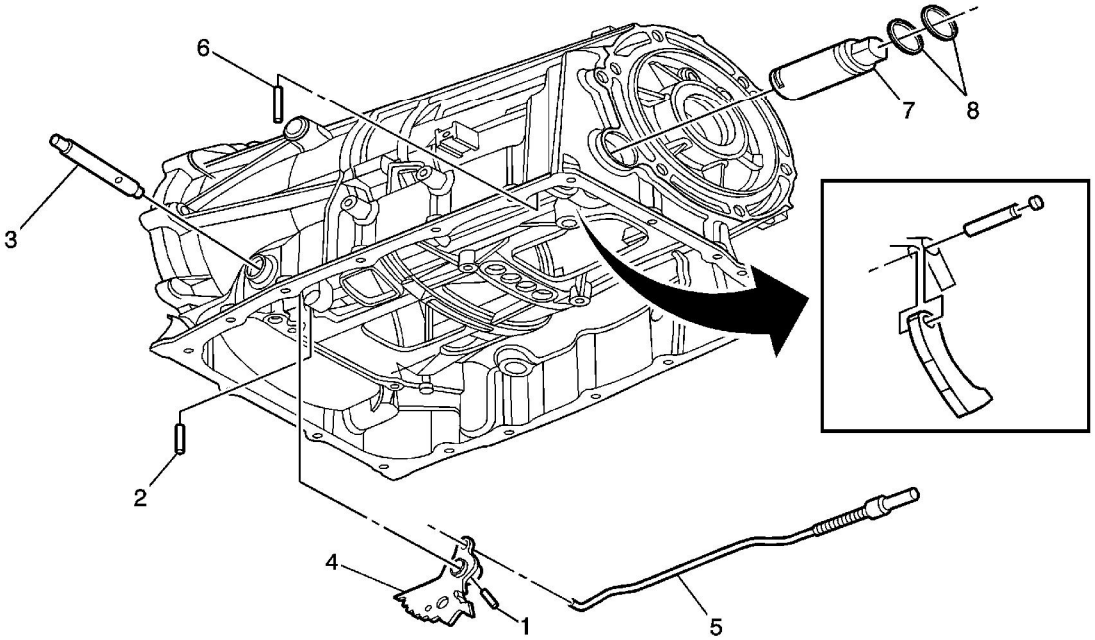
Manual Shift Detent Lever and Park Pawl Actuator Replacement



Callout	Component Name
Note: Do not remove the park pawl or park pawl spring. The park pawl and park pawl spring are not serviceable components. **Preliminary Procedures** 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Remove the transmission fluid pan. Refer to Automatic Transmission Fluid, Fluid Pan and/or Filter Replacement. 3. Remove the manual shaft detent assembly roller. Refer to Control Valve Lower Body and Upper Body Replacement	
1	Manual Shaft Detent Lever Hub Pin **Tip** • Discard the pin. Replace with NEW pin. • "Walk" the pin out using side cutters.
	Manual Shift Shaft Pin

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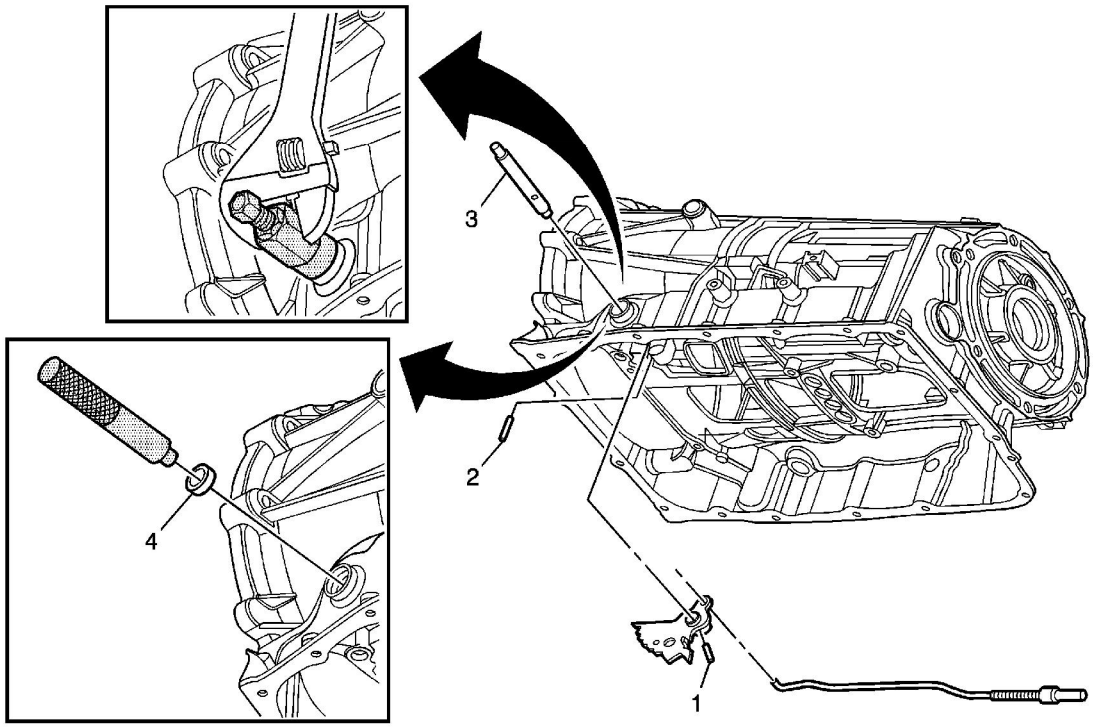
2	**Tip** • Discard the pin. Replace with NEW pin. • "Walk" the pin out using side cutters.
3	Manual Shift Shaft
4	Manual Shaft Detent Lever Assembly
5	Park Pawl Actuator Assembly
6	Park Pawl Actuator Guide Pin **Tip** • Discard the pin. Replace with NEW pin. • "Walk" the pin out using side cutters.
7	Park Pawl Actuator Guide
8	Park Pawl Actuator Guide (O-Ring) Seals (Qty: 2) **Tip** Discard the seals. Replace with NEW seals.

Manual Shift Shaft and Seal Replacement



Callout	Component Name
Preliminary Procedures 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Remove the transmission fluid pan. Refer to Automatic Transmission Fluid, Fluid Pan and/or Filter Replacement. 3. Remove the manual shaft detent assembly roller. Refer to Control Valve Lower Body and Upper Body Replacement.	
1	Manual Shaft Detent Lever Hub Pin **Procedure** 1. Discard the pin. Replace with a NEW pin. 2. "Walk" the pin out using side cutters.
2	Manual Shift Shaft Pin **Procedure** 1. Discard the pin. Replace with a NEW pin. 2. "Walk" the pin out using side cutters.

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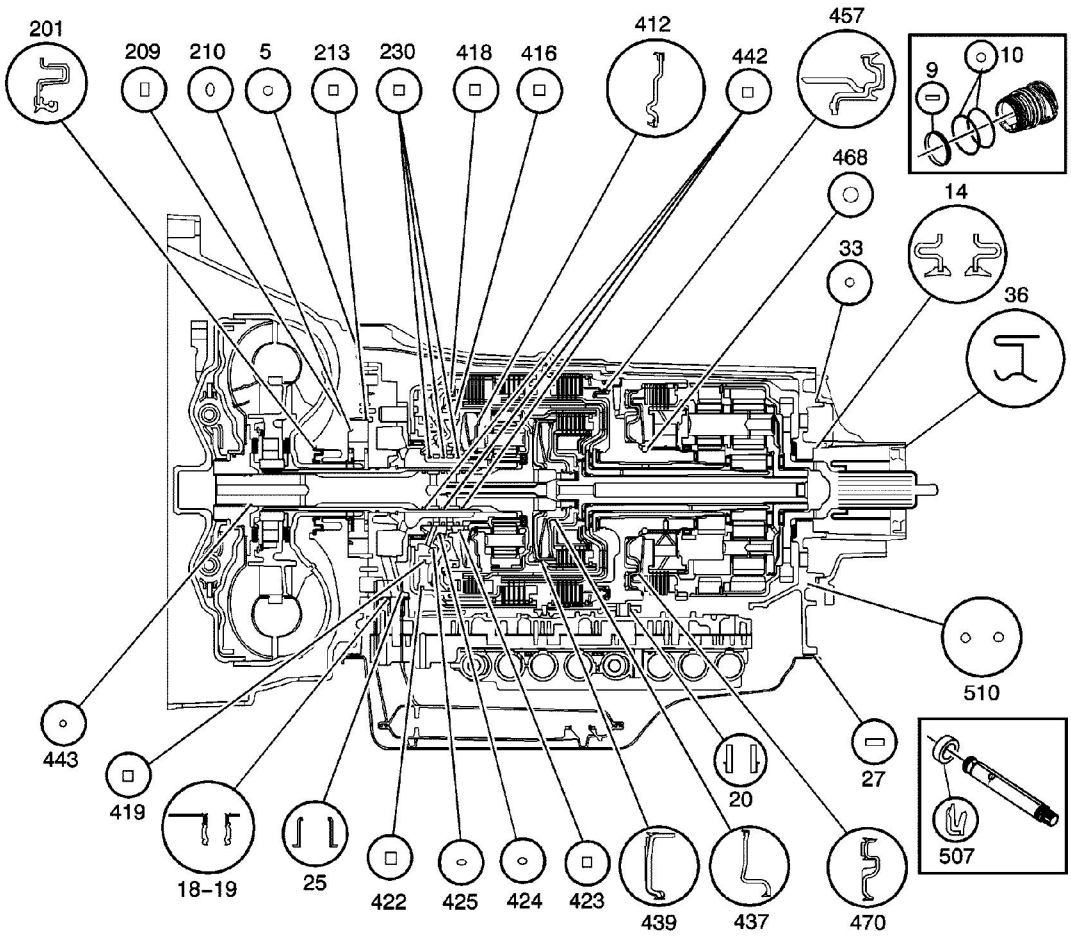
3	Manual Shift Shaft
4	Manual Shift Shaft Seal **Procedure** 1. The manual shaft must be removed to replace the manual shaft seal. 2. Use the J 45201 to remove the seal from the transmission case. 3. Use the DT 47770 to install the seal into the transmission case. **Special Tools** • DT 47770 Seal Installer • J 45201 Cooler Line Seal Remover

Seal Locations

Seal Locations



(5) A/Trans Fluid Pump Seal
(9) A/Trans Connector Seal
(10) A/Trans Connector (O-ring) Seal
(14) Output Shaft Seal Assembly
(18) A/Trans Fluid Pump Seal Assembly
(19) A/Trans Fluid Pump Seal Assembly
(20) Centre Support Fluid Passage Seal Assembly
(25) A/Trans Fluid Filter Seal Assembly
(27) A/Trans Fluid Pan Gasket
(201) Torque Converter Fluid Seal Assembly

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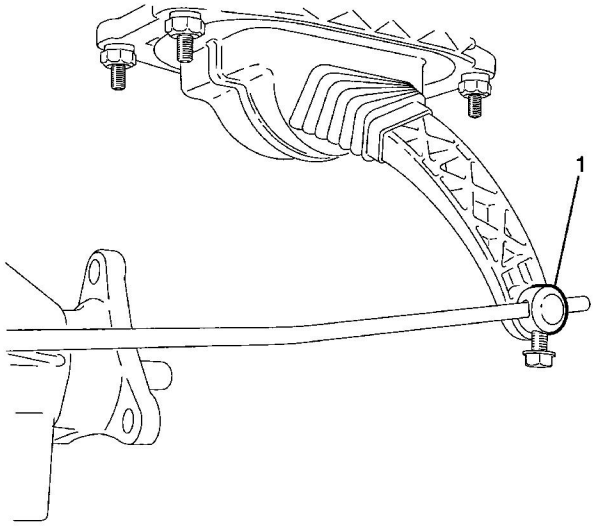
(209) A/Trans Fluid Pump Slide Fluid Seal Ring
(210) A/Trans Fluid Pump Slide (O-ring) Seal
(213) A/Trans Fluid Pump Slide Seal
(230) 1-2-3-4 and 3-5 Reverse Clutch Fluid Seal Ring
(412) 1-2-3-4 Clutch Piston Dam Assembly
(416) 1-2-3-4 Clutch Piston Seal
(418) 3-5 Reverse Clutch Piston Dam (O-ring) Seal
(419) 3-5 Reverse Clutch Piston Inner Seal
(422) 3-5 Reverse Clutch Piston Outer Seal
(423) 1-2-3-4 Clutch Piston Inner Seal
(424) 1-2-3-4 Clutch Piston Housing Seal
(425) 1-2-3-4 Clutch Piston Housing Seal
(437) 4-5-6 Clutch Piston Dam Assembly
(439) 4-5-6 Clutch Piston Assembly
(442) Turbine Shaft Fluid Seal Ring
(443) Turbine Shaft (O-ring) Seal
(457) 2-6 Clutch Piston Assembly
(468) Low Clutch Sprag Seal
(470) Low and Reverse Clutch Piston Assembly
(507) Manual Shift Shaft Seal
(510) Park Pawl Actuator Guide (O-ring) Seal

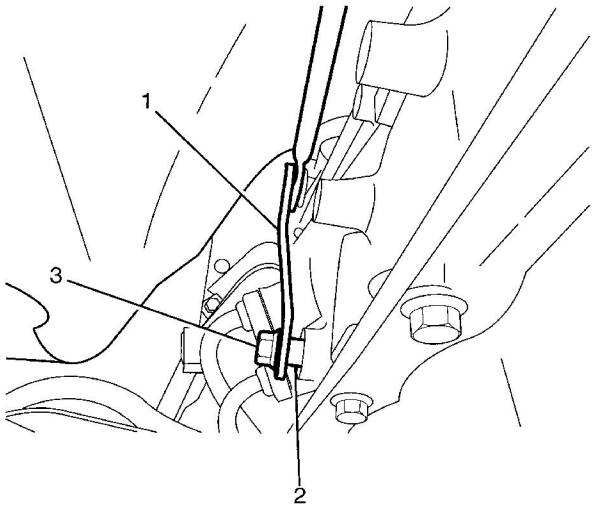
Shift Control Linkage Replacement

Removal Procedure

1. Position the shift lever in PARK.
2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



3. Remove the shift control linkage rod retaining bolt.
4. Disconnect the shift control linkage rod from the shift control assembly (1).



5. Remove the manual shift shaft retaining nut (3).
6. Remove the shift control linkage (1) from the transmission selector shaft (2).

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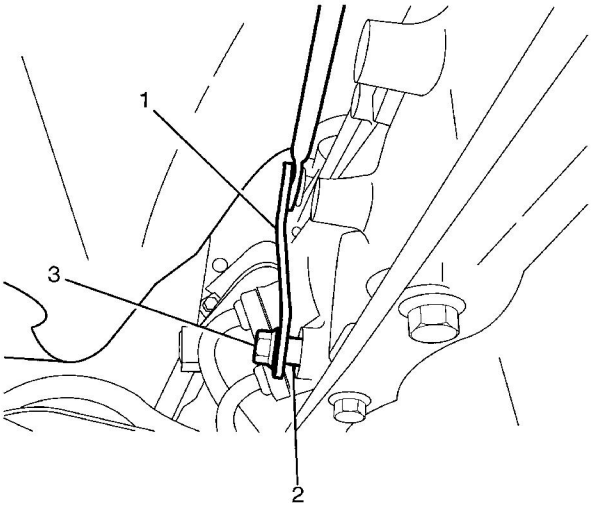
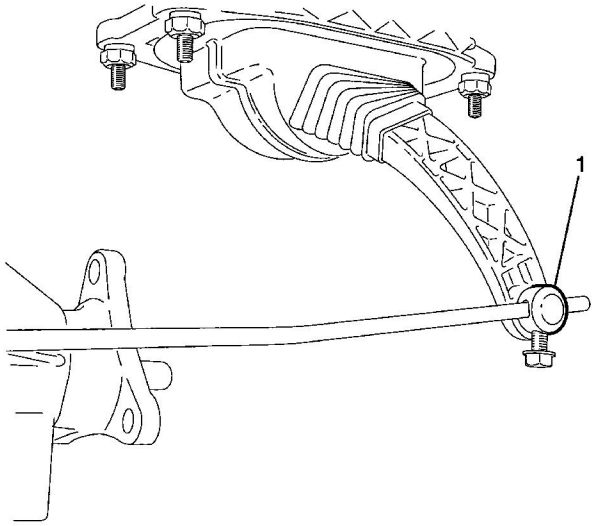
Installation Procedure



1. Install the shift control linkage (1) to the transmission selector shaft (2).

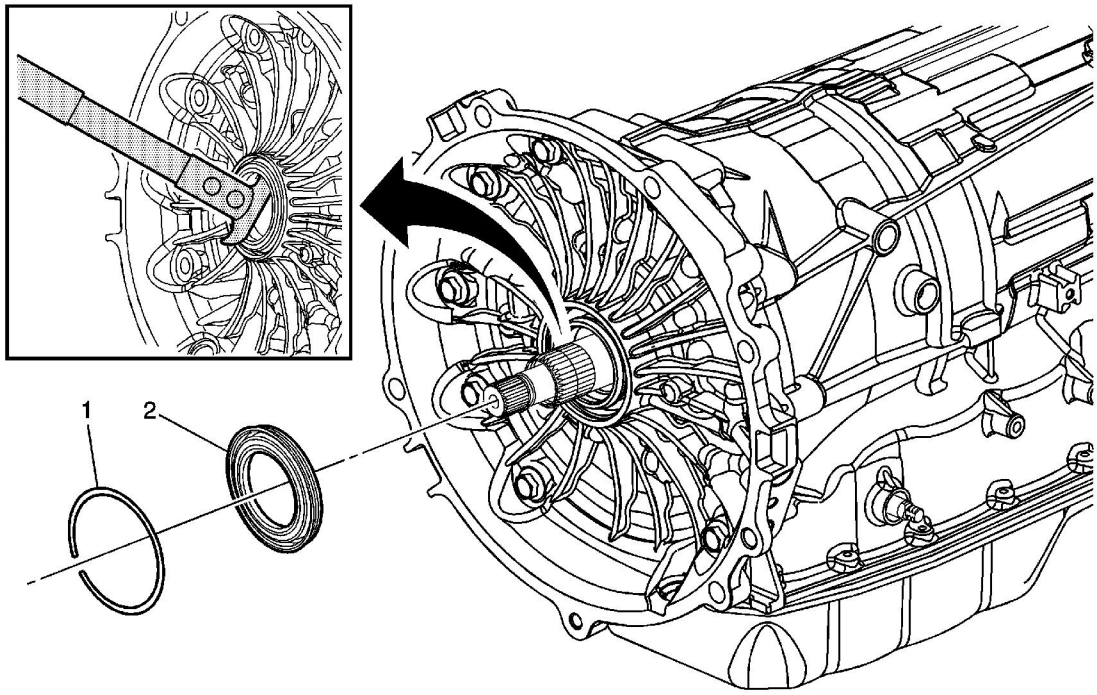
   Caution: Refer to Fastener Caution in the Preface section.

2. Install the manual shift shaft retaining nut (3) and tighten to **9 N·m (80 lb in)**.



3. Connect the shift control linkage rod to the shift control assembly (1).
4. Install the shift control linkage rod retaining bolt.
5. Adjust the shift control linkage. Refer to Shift Control Linkage Adjustment.
6. Lower the vehicle.

Torque Converter Fluid Seal Replacement



Callout	Component Name
Fastener Tightening Specifications: Refer to Fastener Tightening Specifications . **Preliminary Procedures** Remove the torque converter. Refer to Torque Converter Replacement .	
1	Torque Converter Fluid Seal Retaining Ring
2	Torque Converter Fluid Seal **Tip** Remove seal using J 45000

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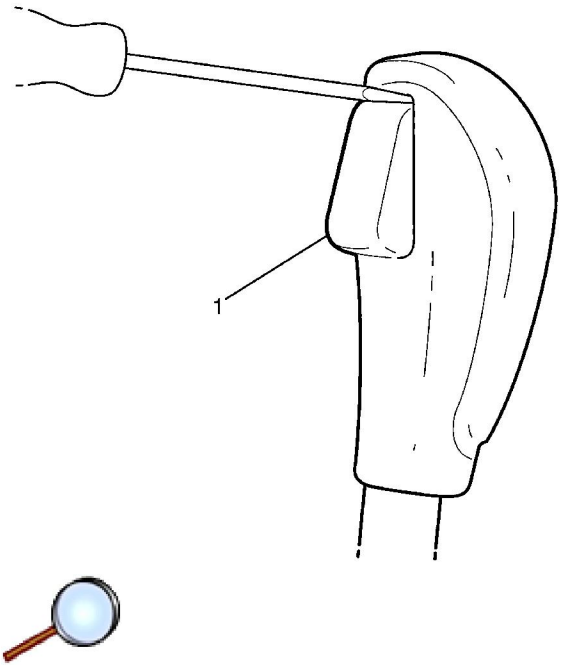
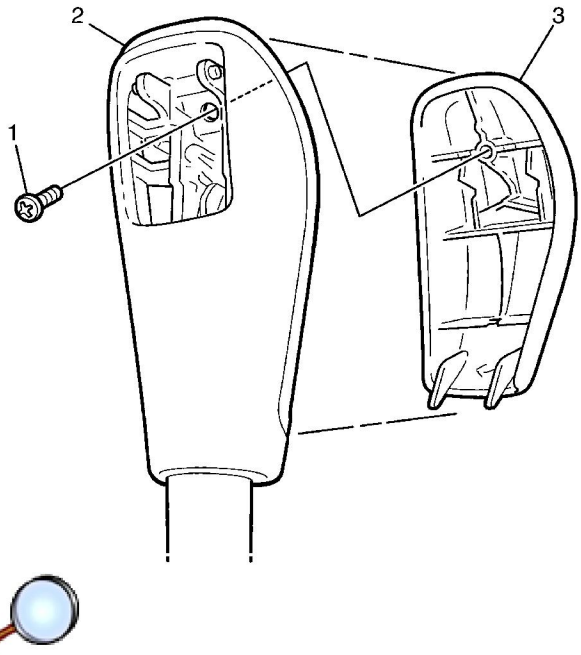
Transmission Control Lever Knob Replacement

Removal Procedure



1. Using a suitable tool lever release knob (1) out of selector lever



2. Remove selector retaining screw (1) from the selector lever (2) and remove lever backing (3).

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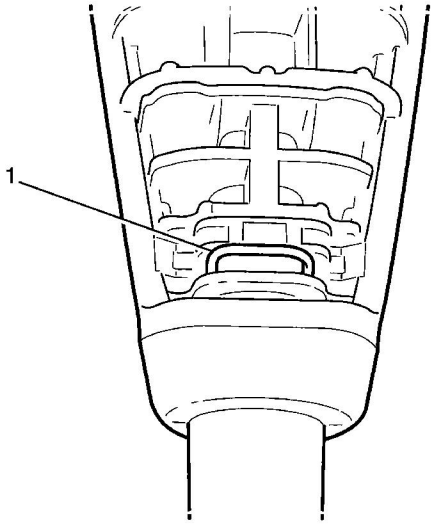
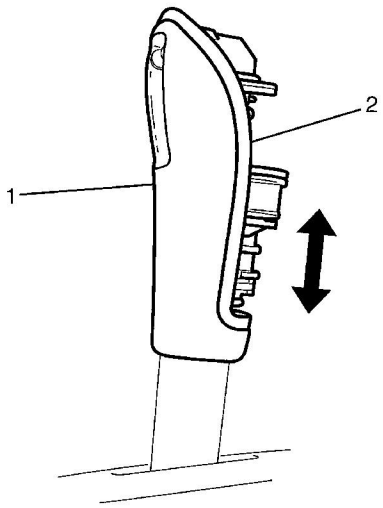
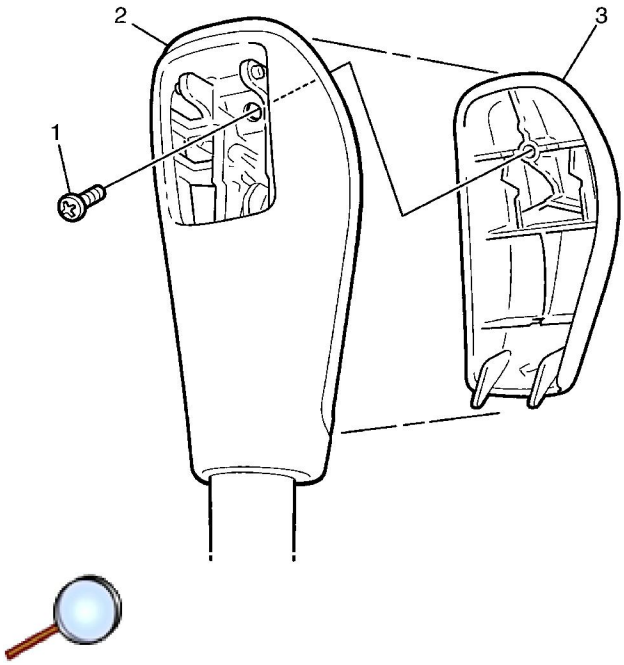


3. Remove the selector lever knob metal retainer clip (1).
4. Remove selector lever knob spacer.
5. Remove selector lever knob by sliding upwards off assembly.

Installation Procedure



1. Install the selector lever knob (1) by sliding down on the assembly.
2. Install the selector lever knob spacer (2).
3. Install the selector lever knob metal retainer clip.

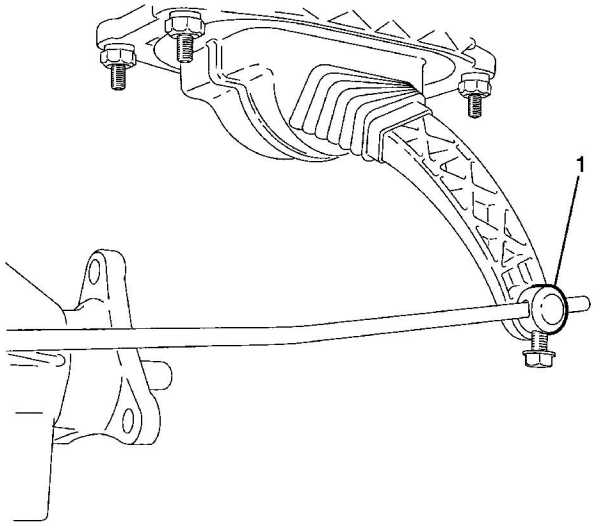


4. Install the lever backing (3) and retaining screw (1) to the selector lever (2).
5. Install the release knob into selector lever.

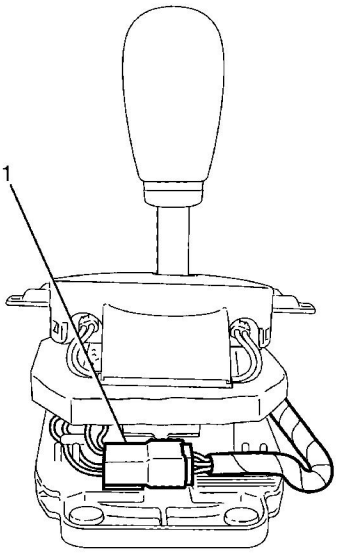
Transmission Control Replacement

Removal Procedure

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



2. Remove the shift control linkage adjustment nut.
3. Disconnect the shift control linkage rod from the shift control assembly (1).
4. Lower the vehicle.
5. Remove the center console assembly. Refer to Front Floor Console Replacement.



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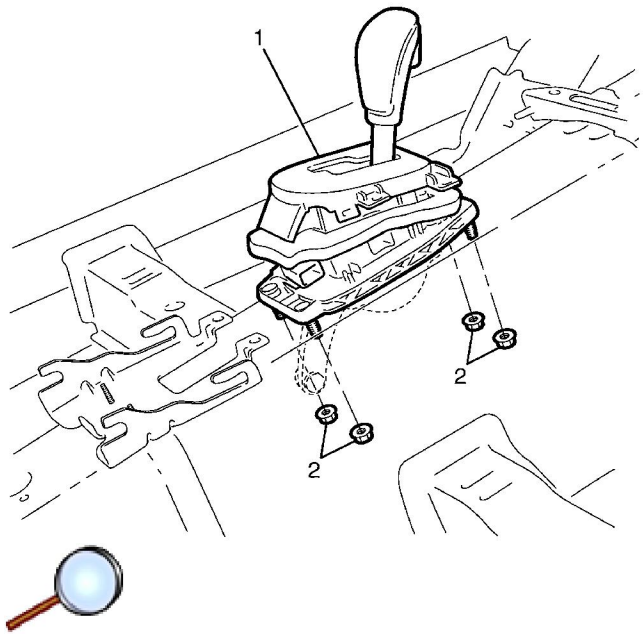
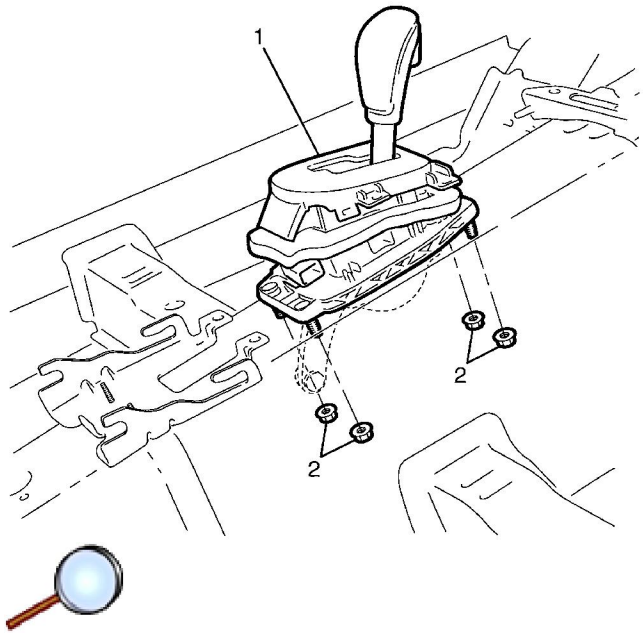
6. Remove the electrical connector (1) from the shift control assembly.



7. Remove the shift control assembly to the tunnel reinforcement retaining nuts (2).
8. Remove the shift control assembly (1) from the tunnel reinforcement.

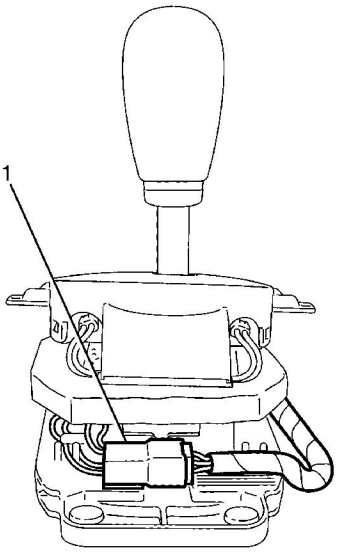
Installation Procedure



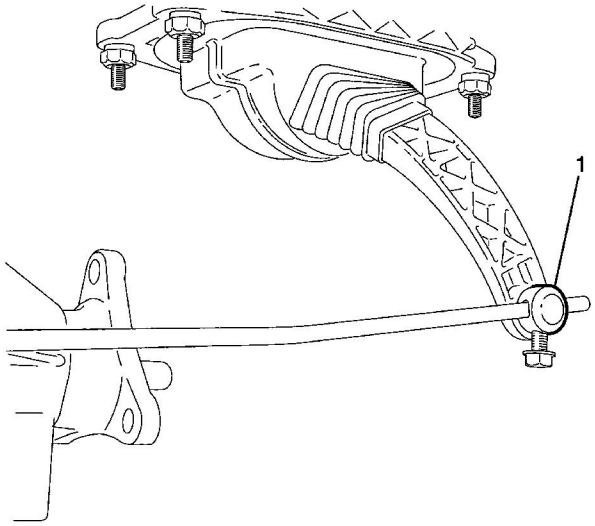
1. Install the shift control assembly (1) to the tunnel reinforcement.

   Caution: Refer to Fastener Caution in the Preface section.

2. Install the shift control assembly to the tunnel reinforcement retaining nuts (2) and tighten to **12 N·m (106 lb in)**.

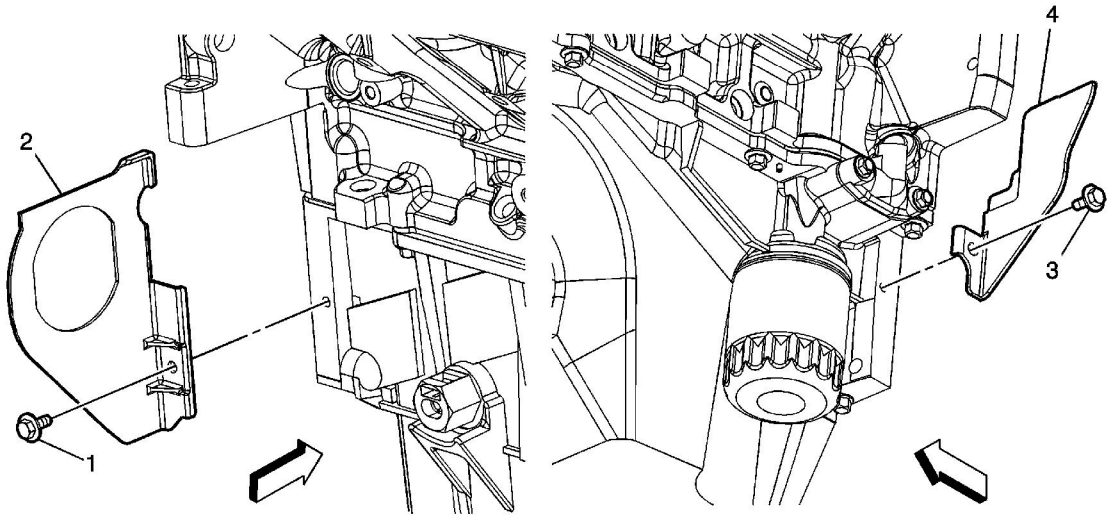


3. Install the electrical connector (1) to the shift control assembly.
4. Install the centre console assembly. Refer to Front Floor Console Replacement.
5. Install the shift control trim plate by inserting the front retaining tabs to the console. Press down on the rear of the trim plate to engage the rear retaining tabs.
6. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.



7. Connect the shift control linkage rod to the shift control assembly (1).
8. Install the shift control linkage adjustment nut finger tight.
9. Adjust the shift control linkage. Refer to Shift Control Linkage Adjustment.
10. Lower the vehicle.

Transmission Converter Cover Replacement



Callout	Component Name
Preliminary Procedures Raise the vehicle. Refer to Lifting and Jacking the Vehicle.	
1	Torque Converter Cover Bolt **Caution:** Refer to Fastener Caution in the Preface section. **Tighten** 10 N·m (89 lb in)
2	Torque Converter Cover **Tip** Remove the starter. Refer to Starter Motor Replacement.
3	Torque Converter Cover Bolt **Tighten** 10 N·m (89 lb in)
4	Torque Converter Cover

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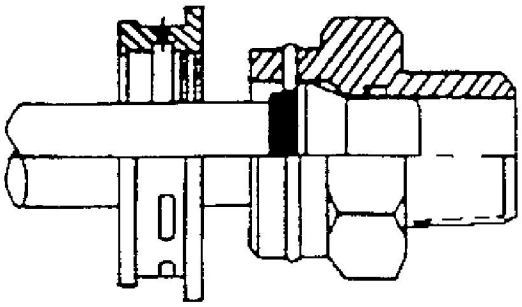
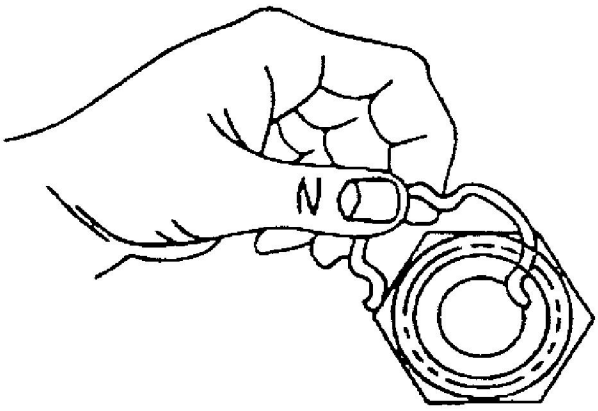
Transmission Fluid Cooler Hose/Pipe Quick-Connect Fitting Disconnection and Connection

Removal Procedure



1. Remove the plastic cap from the quick connect fitting.



2. Remove the retaining ring from the quick connect fitting.

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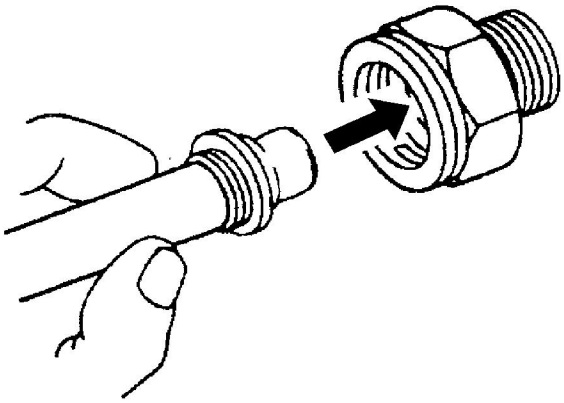


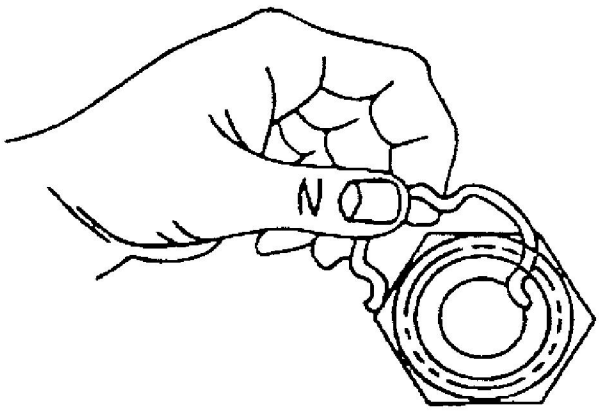
3. Remove the cooler line from the quick connect fitting.

Installation Procedure

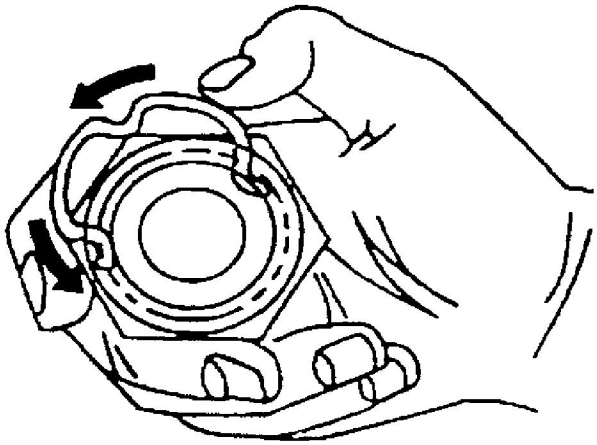
Important:

- Do not reuse any of the existing oil lines or oil line fittings if there is excessive corrosion.
- Do not reuse any of the existing retaining rings that were removed from the existing quick connect fittings. Install new retaining rings.
- Ensure the following procedures are performed when installing the new retaining rings onto the fittings.

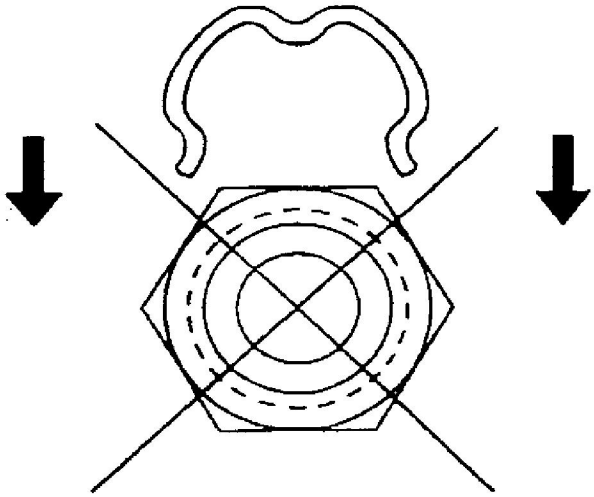
1. Install a new retaining ring into the quick connect fitting using the following procedure:



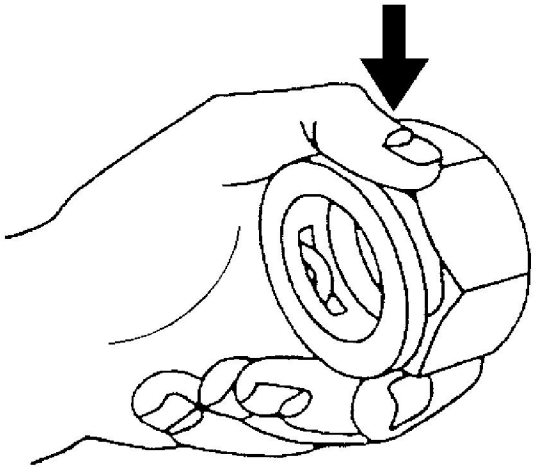
2. Hook one of the open ends of the retaining ring in one of the slots on the quick connect fitting.



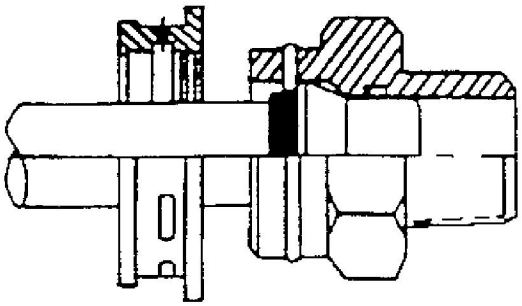
3. Rotate the retaining ring around the fitting until the retaining ring is positioned with all three ears through the three slots on the fitting.



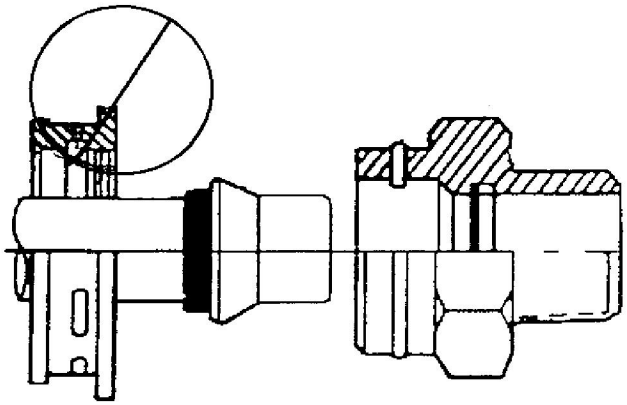
4. Do not install the new retaining ring onto the fitting by pushing the retaining ring.



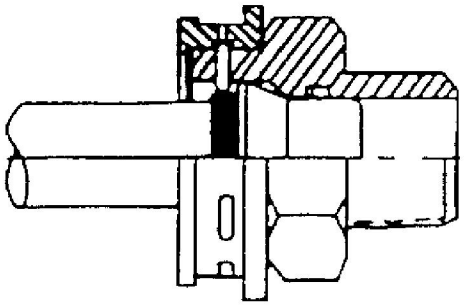
5. Ensure that the three retaining ring ears are seen from inside the fitting and that the retaining ring moves freely in the fitting slots.



6. Install the cooler line into the quick connect fitting.
7. Insert the cooler line end into the quick connect fitting until a click is either heard or felt.

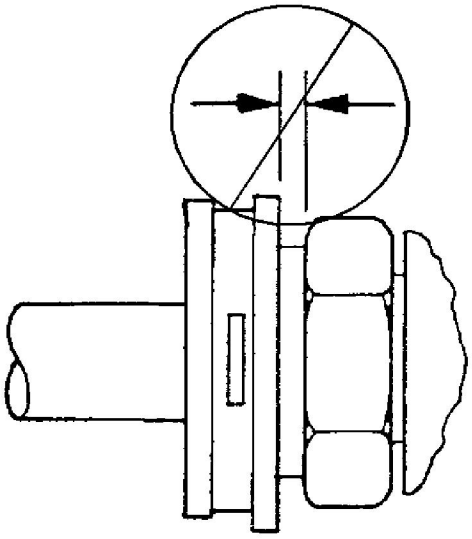


8. Do not use the plastic cap on the cooler line in order to install the cooler line into the fitting.
9. Pull back sharply on the cooler line in order to make sure that the cooler line is fastened into the quick connect fitting.

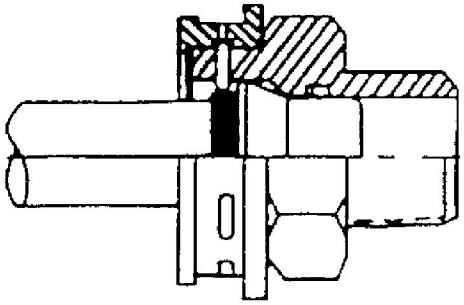


Important: Do not manually depress the retaining clip when installing the plastic cap.

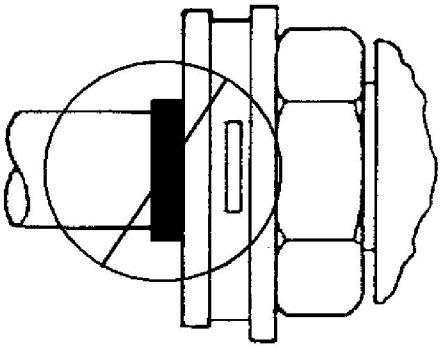
10. Position (snap) the plastic cap onto the fitting. Do not manually depress the retaining ring when installing the plastic cap onto the quick connect fitting.
11. Ensure that the plastic cap is fully seated against the fitting.



12. Ensure that no gap is present between the cap and the fitting.



13. Ensure that the yellow identification band on the tube is hidden within the quick connect fitting.



14. A hidden yellow identification band indicates proper joint seating.
15. Fill the transmission to the proper level with DEXRON® VI transmission fluid. Refer to Transmission Fluid Check.

Transmission Mount Inspection

Caution: In order to avoid oil pan damage and possible engine failure, insert a block of wood that spans the width of the oil pan bottom between the oil pan and the jack support.

1. Raise the transmission/transaxle in order to remove the weight from the transmission/transaxle mount and create slight tension in the rubber.
2. Observe the transmission/transaxle mount while raising the transmission/transaxle. Replace the transmission/transaxle mount if the transmission/transaxle mount exhibits any of the following conditions:

   Note: Black paint on the rubber will crack with time. This does no constitute a failure.

   - The hard rubber surface is covered with heat check cracks.
   - The rubber is separated from the metal plate of the transmission/transaxle mount.
   - The rubber is split through the center of the transmission/transaxle mount.
3. If there is movement between the metal plate of the transmission/transaxle mount and its attaching points, lower the transmission/transaxle on the transmission/transaxle mount. Tighten the retaining bolts or nuts attaching the transmission/transaxle mount to the frame or transmission/transaxle mount bracket.

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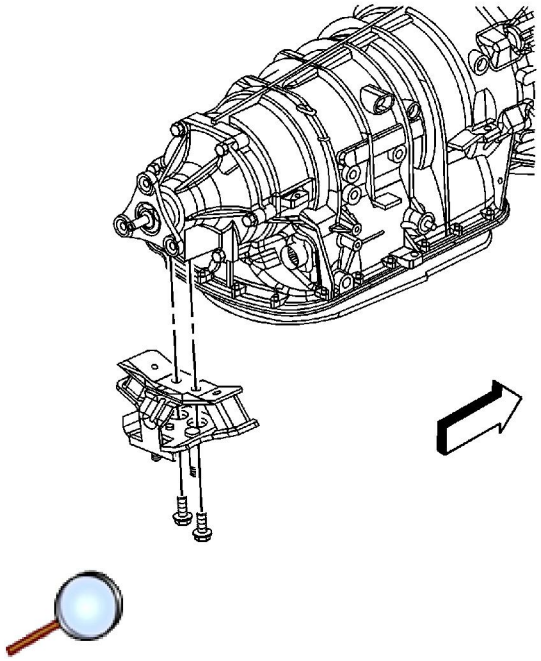
Transmission Mount Replacement

Removal Procedure

1. Remove the exhaust system. Refer to Exhaust System Replacement.

   Note: The engine mounts must NOT bend or deflect from the vertical position, damage to the mount will occur.

2. Support the transmission with a suitable jack and a block of wood.
3. Remove the transmission support. Refer to Transmission Support Replacement.



4. Remove the transmission mount bolts.
5. Remove the transmission mount from the vehicle.

Installation Procedure

Note: The engine mounts must NOT bend or deflect from the vertical position, damage to the mount will occur.

1. Install the transmission mount to the vehicle.

   Caution: Refer to Fastener Caution in the Preface section.

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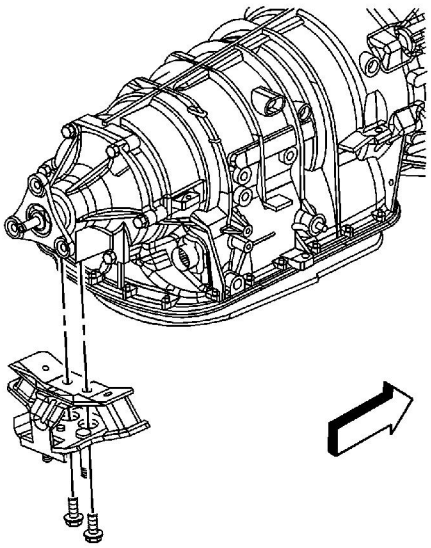
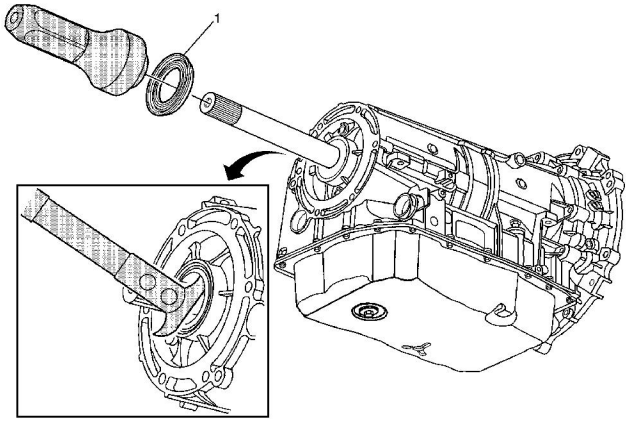


2. Install the transmission mount bolts and tighten to **60 N·m (44 lb ft)**.
3. Install the transmission support. Refer to Transmission Support Replacement.
4. Remove the support from under the transmission.
5. Install the exhaust system.
6. Lower the vehicle.

Transmission Output Shaft Seal Replacement



Callout	Component Name
Preliminary Procedures 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Remove the propeller shaft. Refer to Propeller Shaft Replacement. 3. Support the transmission with a suitable jack. 4. Remove the transmission mount assembly. 5. Remove the transmission extension housing assembly. Refer to Output Shaft Seal Replacement.	
1	Output Shaft Seal • Use the J 45000 to remove the seal. Use care in order to avoid damaging the output shaft bushing. • Lubricate the seal with clean transmission fluid. • Use the J 38693 to install the seal.

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Transmission Replacement

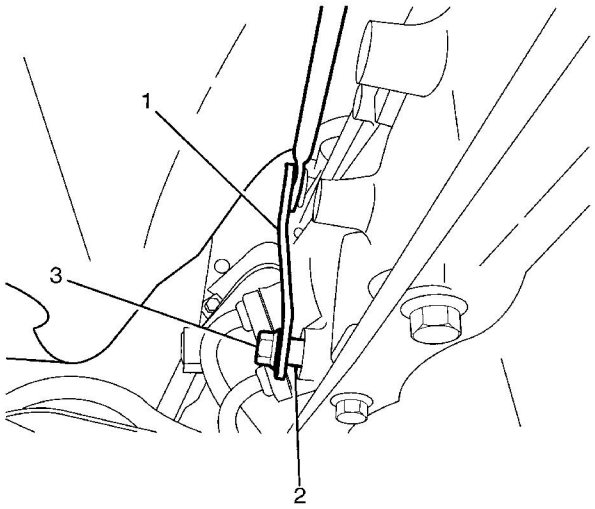
Special Tools

- J 42386-A Flywheel Holding Tool
- EN-48536 Frame Support Tool (Engine Lower 65 mm Kit)

Removal Procedure

Note: NEW torque converter bolts will be required each time the torque converter bolts are removed.

1. Disconnect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.
2. Remove air intake ducting from engine.
3. Remove radiator retaining clips.
4. Disconnect the EVAP purge pipe.
5. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
6. Remove the propeller shaft. Refer to Propeller Shaft Replacement.
7. Remove the air deflector front (1). Refer to Front Air Deflector Replacement.
8. Remove the splash shield.



9. Remove the transmission manual shift shaft nut (3).
10. Disconnect the shift linkage (1) from the transmission shift shaft (2).

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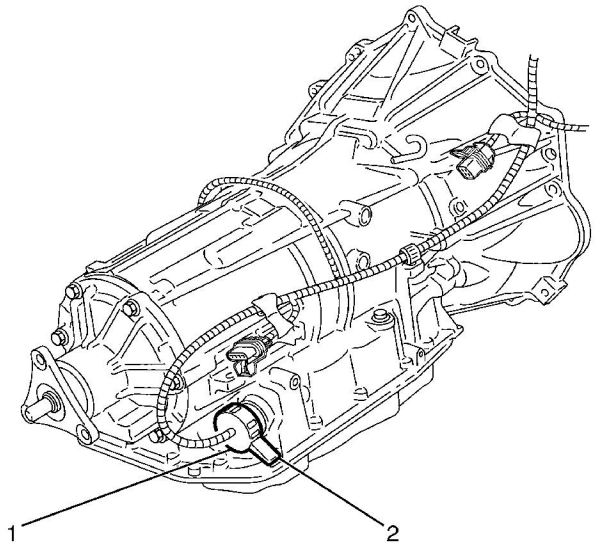
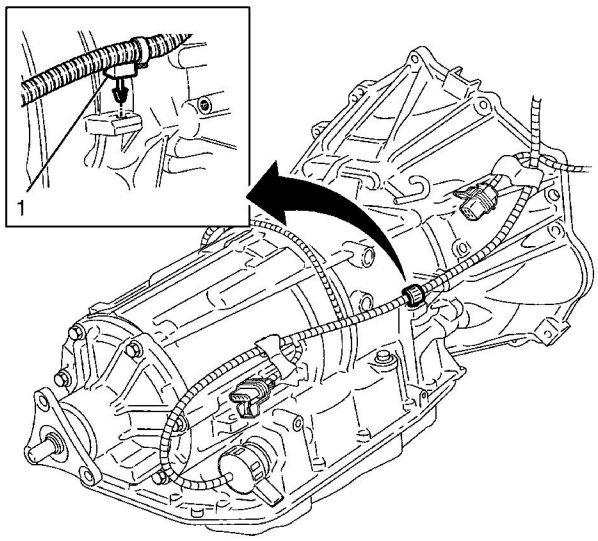
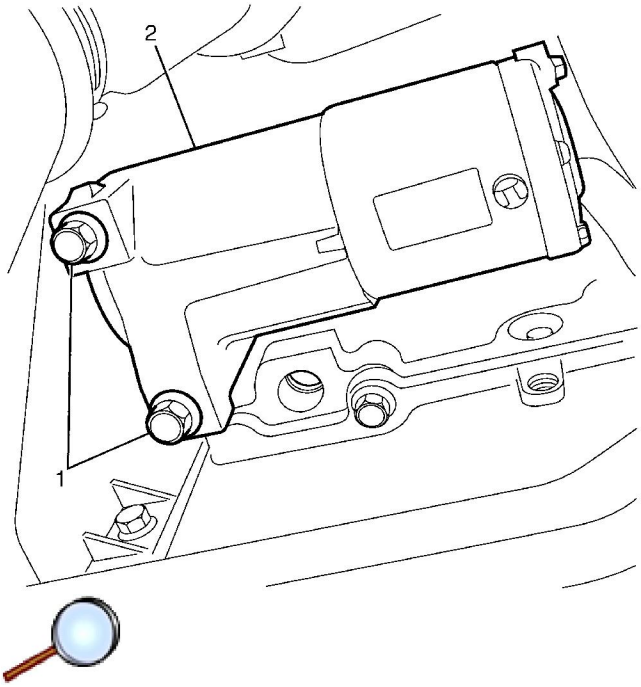


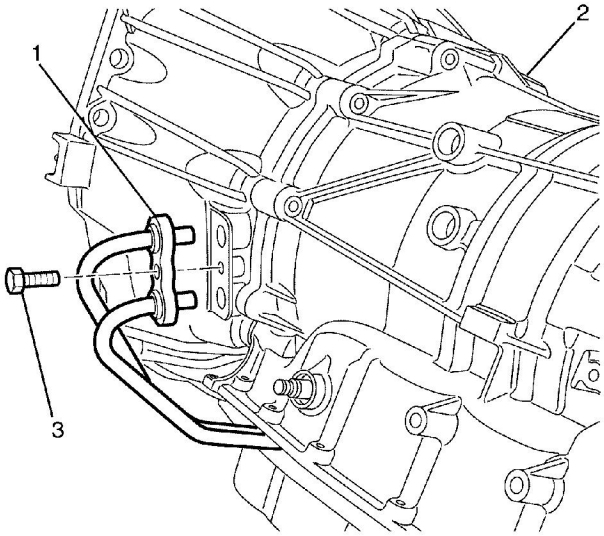
11. Disconnect the transmission wiring harness connector (1) from the transmission by rotating the locking latch (2) counter-clockwise.



12. Disconnect the wiring harness clips from the transmission, and position the wiring harness aside.

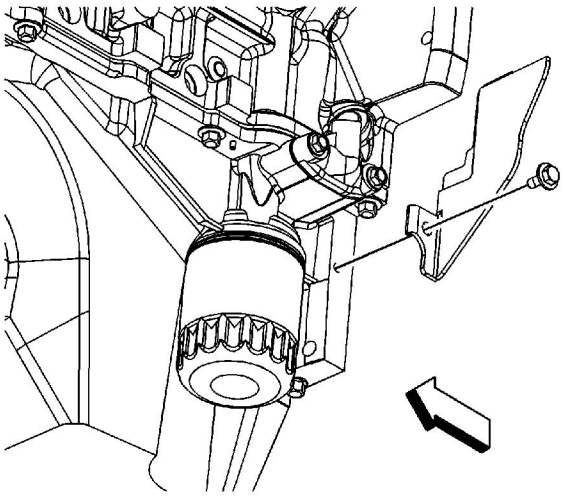


13. Remove the starter motor (2) to gain access to the torque converter bolts. Refer to Starter Motor Replacement.
14. Mark the torque converter to flexplate/flywheel orientation to make sure proper realignment.
15. Repeat the following steps for all 3 torque converter bolts:
    15.1. Rotate the harmonic balancer centre bolt clockwise ONLY, in order to align the torque converter bolt with the starter motor opening in the engine block.
    15.2. Remove and discard the torque converter bolt. The bolt is self locking and is NOT reusable.
16. Using inspection hole push torque converter back towards transmission pump
17. Place an oil drain pan under the transmission fluid cooler pipes.
18. Remove the bolt securing the transmission fluid cooler pipes brace to the engine.



19. Disconnect the fluid cooler pipes from the transmission.
20. Plug the open outlet ports to prevent fluid loss and contamination.

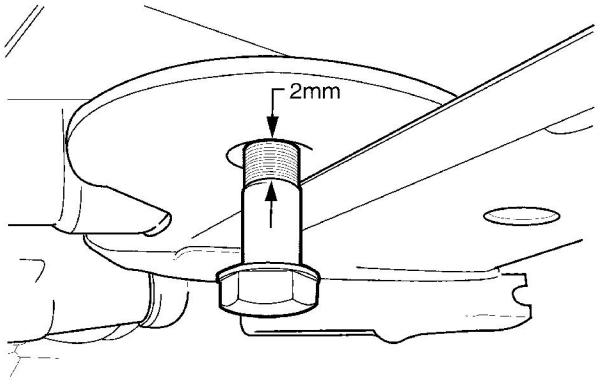
21. Disconnect the steering shaft from the steering rack



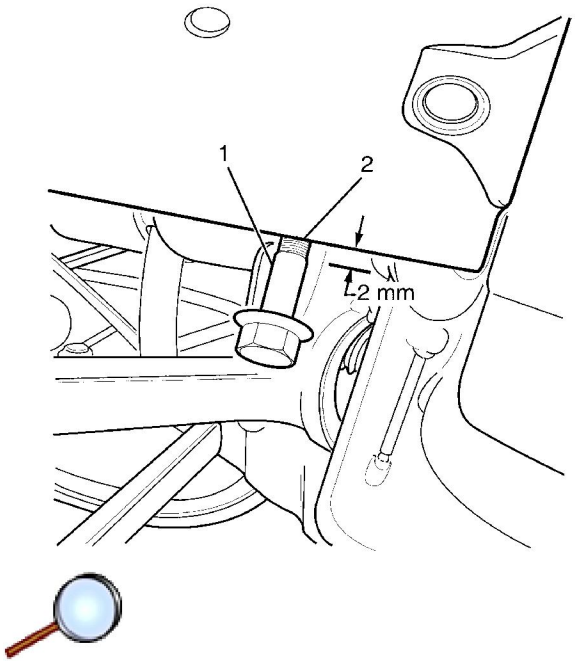
22. Remove the engine close out cover studs and cover.

Note: The engine mounts must NOT bend or deflect from the vertical position, damage to the mount will occur.

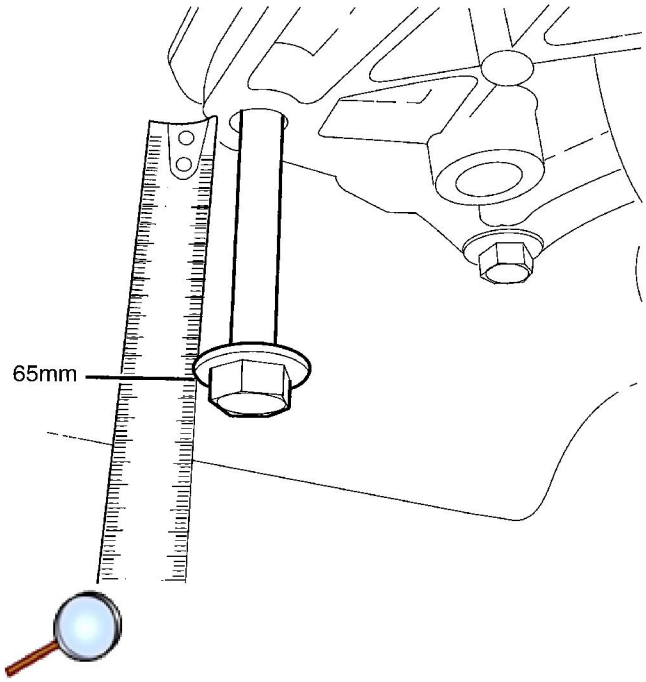
23. Support the power train with a suitable jack or table.
24. Using special tool XX lower engine and transmission assembly 65 mm.
25. Support the transmission with a suitable jack.



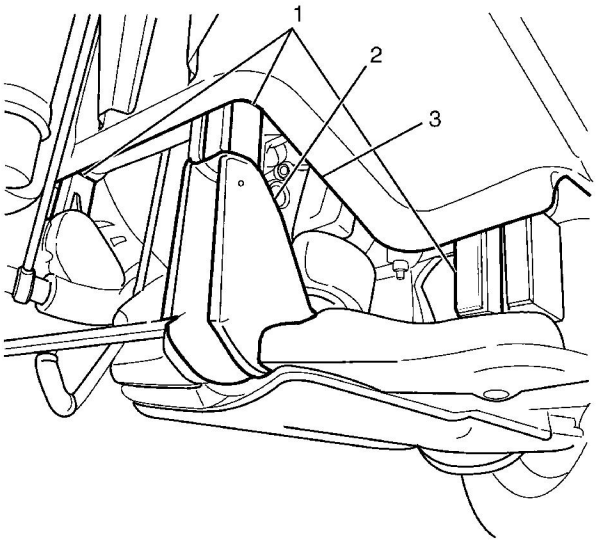
26. Replace the front sub frame rear bolts and fit bolts from special tool kit EN-48536
27. Install bolt till stepped shank (1) is 2 mm below sub frame (2).



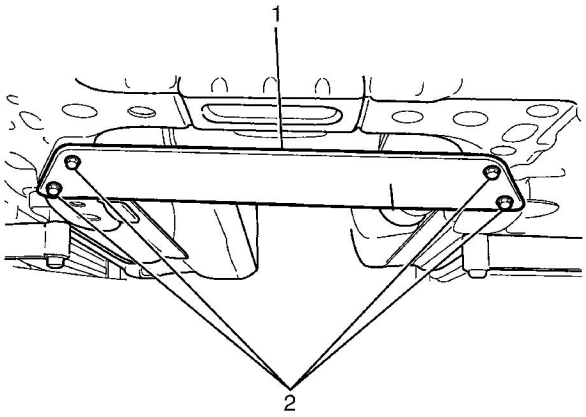
28. Replace the front sub frame front bolts and fit bolts from special tool kit EN-48536
29. Install bolt till stepped shank (1) is 2 mm below chassis rail flange (2).



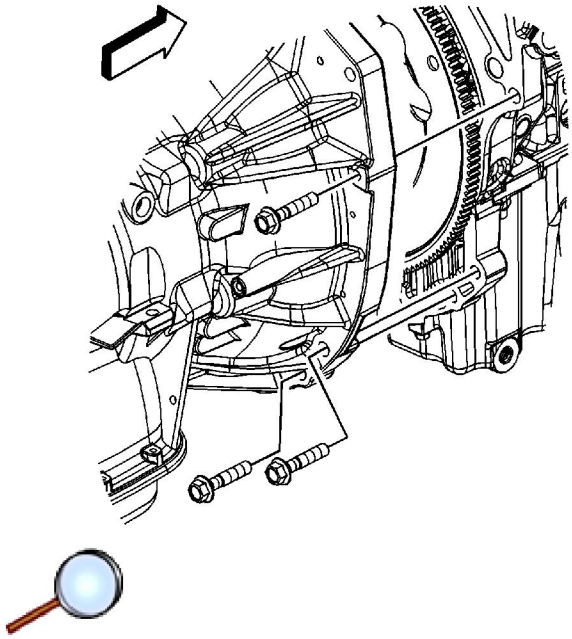
30. Remove all four transmission mount to body bolt and install two bolts from special tool kit in diagonal holes e.g Left hand front and Right hand rear.
31. Install in till 65 mm is measured between bolt heads (1) and transmission mount (2).
32. Remove front sub frame middle bolts.
33. Lower power train slowly until the subframe and transmission mount are resting on bolts.



34. Insert 65 mm spacer blocks (1) between subframe (2) and chassis rails (3).
35. Tension front sub frame front and rear bolts and tighten to **95 N·m (70 lb ft)**.
36. Install and tension middle sub frame bolts and tighten to **95 N·m (70 lb ft)**.
37. Remove supporting jack or table



38. Install engine support plate (1) to front sub frame (2).
39. Tension plate securing bolts (3) and tighten to **10 N·m (89 lb in)**.



40. Remove the transmission bolts.
41. Pull the transmission free from the engine dowels.

Note: Ensure clearance is maintained between the transmission and the following:

- The catalytic converters
- The wiring harnesses
- The cooler pipes
- The propeller shaft

42. Carefully lower the transmission from the vehicle.
43. Flush the transmission oil cooler. Refer to Transmission Fluid Cooler Flushing and Flow Test

Installation Procedure

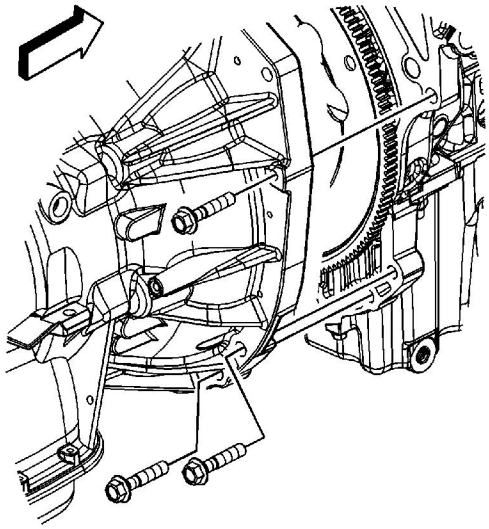
Note: The engine mounts must NOT bend or deflect from the vertical position, damage to the mount will occur.

Note: Ensure clearance is maintained between the transmission and the following:

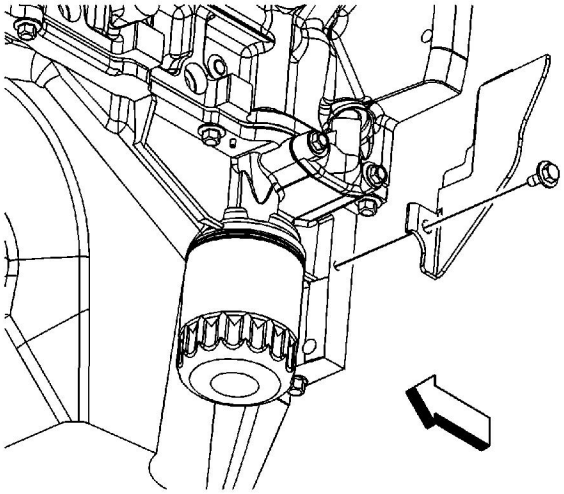
- The catalytic converters
- The wiring harnesses
- The cooler pipes
- The propeller shaft

1. Using the transmission jack, carefully raise the transmission to the vehicle.
2. Align the transmission with the engine dowels.

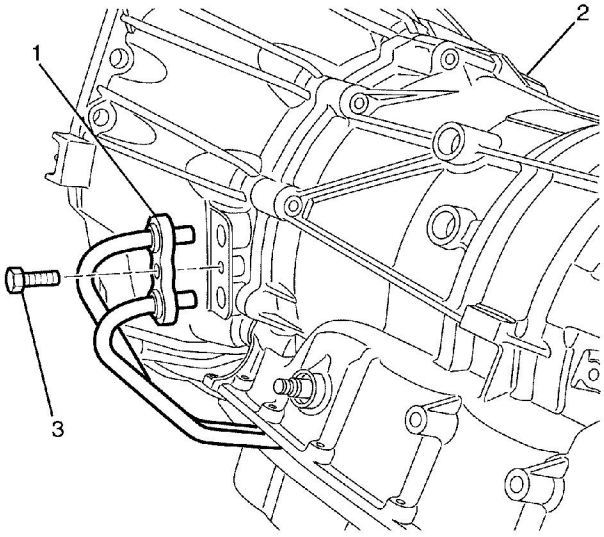
Caution: Refer to Fastener Caution in the Preface section.



3. Install the side transmission bolts and tighten to **50 N·m (37 lb ft)**.
4. Install transmission bolts.

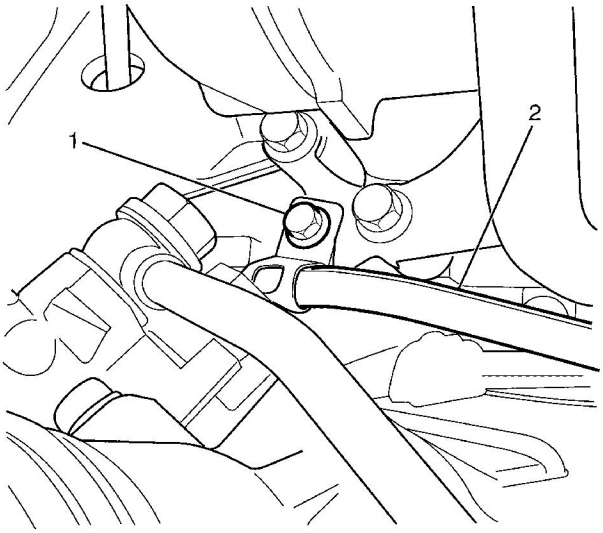


5. Install the engine close out cover and studs and tighten to **10 N·m (89 lb in)**.
6. Raise the powertrain back up into the engine bay and tighten front sub frame retaining bolts.
   - Tighten the retaining bolts to **160 N·m (118 lb ft)**
   - Tighten the front four bolts to **240 N·m (177 lb ft)**
7. Install the steering shaft to the steering rack.

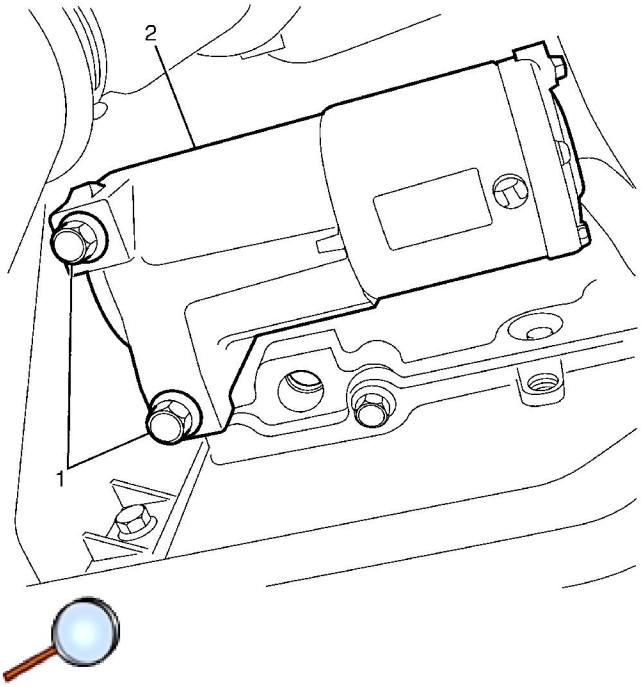


Note: Replace the O-rings if cracked, cut, or distorted.

8. Lubricate the O-rings with automatic transmission fluid.
9. Install the O-rings onto the cooler pipes prior to inserting the cooler pipes into the transmission.
10. Insert the transmission fluid cooler pipes into the transmission.
11. Install the bolt securing the transmission fluid cooler pipe retainer to the transmission and tighten to **25 N·m (18 lb ft)**.



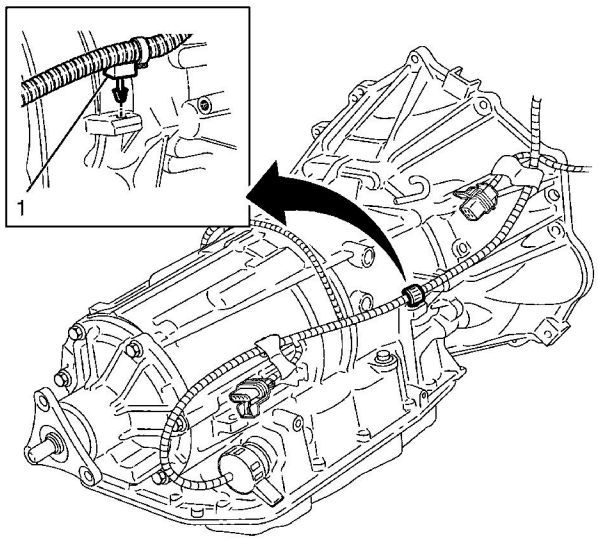
12. Install the bolt securing the transmission fluid cooler pipes brace to the engine and tighten to **22 N·m(17 lb ft)**.



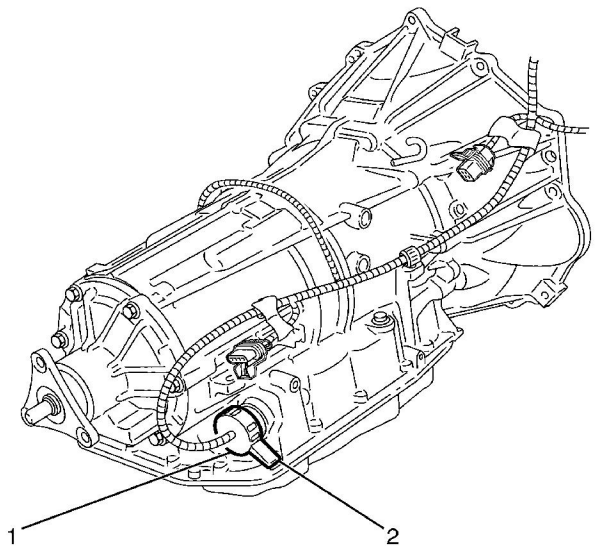
13. Align the torque converter to flexplate/flywheel orientation marks made during the removal procedure.

Note: Torque converter bolts are self locking and must be replaced with NEW torque converter bolts every time the bolts are removed.

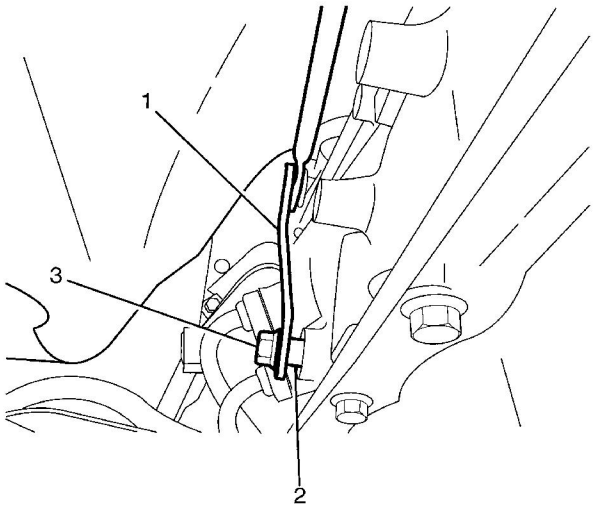
14. Repeat the following steps for all 3 torque converter bolts:
    14.1. Rotate the harmonic balancer centre bolt clockwise ONLY, in order to align the torque converter bolt holes in the flexplate/flywheel with the starter motor opening in the engine block.
    14.2. To aid in alignment of the torque converter to the flexplate/flywheel. Install all 3 NEW torque converter bolts before fully tightening to **63 N·m (46 lb ft)**.
15. Install the starter motor (2). Refer to Starter Motor Replacement.
16. Install the air deflector front (1). Refer to Front Air Deflector Replacement.



17. Connect the wiring harness clips to the transmission.



18. Connect the transmission wiring harness connector (1) to the transmission by rotating the locking latch (2) clockwise.
19. Install the propeller shaft coupler to the transmission flange. Refer to Propeller Shaft Replacement.



20. Place the transmission in the park position by rotating the shift shaft fully counter clockwise.
21. Connect the shift linkage to the transmission.
22. Install the transmission manual shift shaft nut and tighten to **15 N·m (11 lb ft)**.
23. Check the transmission fluid level (fill if necessary). Refer to Transmission Fluid Check.
24. Adjust the shift control linkage.
25. Lower the vehicle.

26. Connect the EVAP purge pipe.
27. Install radiator retaining clips.
28. Install air intake ducting from engine.
29. Connect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.
30. The transmission control module must be programmed with the proper software/calibrations. Refer to Service Programming System (SPS).

Final Test and Inspection

Complete the following procedure after the transmission is installed in the vehicle:

1. With the ignition OFF or disconnected, crank the engine several times. Listen for any unusual noises or evidence that any parts are binding.
2. Start the engine and listen for abnormal conditions.
3. While the engine continues to idle raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
4. Inspect for fluid leaks while the engine is idling.
5. Lower the vehicle.
6. Perform a final inspection for the proper fluid level.
7. Road test the vehicle.